

Docket No. 520.43119X00
Serial No. 10/659,372
Office Action dated December 1, 2005

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

LISTING OF CLAIMS:

1. (Canceled).
2. (Currently Amended) A magnetic head slider, as described in the claim 34, wherein said recording element and said reproducing element are constructed to be a single element.
3. (Currently Amended) A magnetic head slider, ~~as described in the claim 1,~~
comprising:
 - a recording element for recording information on a magnetic disk;
 - a reproducing element for reproducing information from the magnetic disk;
 - a slider for mounting thereon said recording element and said reproducing element, disposed opposing the magnetic disk; and
 - a heat generating portion provided on said slider, for thermally expanding a vicinity of at least said reproducing element,wherein said heat generating portion and said reproducing element are disposed so that an end portion of said slider on a surface side opposing to the magnetic disk, in said heat generating portion, is located deeper than an end portion of said slider on a surface side opposing to the magnetic disk, in said reproducing element, and

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wherein said recording element and said reproducing element are formed through laminating thin-films on a substrate, being disposed so that said heat generating portion is located ~~locates~~ on said substrate side with respect to said recording element and said reproducing element, in a normal direction of the substrate, i.e., in a direction of laminating the thin-films, and having a metal film(s) on one side or on both sides of said heat generating portion relating to said thin-film laminating direction, to be thermally expanded by means of said heat generating portion.

4. (Currently Amended) A magnetic head slider, as described in the claim 34, wherein said recording element and said reproducing element are formed through laminating thin-films on a substrate, being disposed so that said heat generating portion ~~locates~~ on said substrate side with respect to said recording element and said reproducing element, in a normal direction of the substrate, i.e., in a direction of laminating the thin-films, and being provided with a layer made of a resin material between said heat generating portion and said substrate relating to said thin-film laminating direction.

5. (Currently Amended) A magnetic head slider, as described in the claim 34, wherein a distance between said heat generating portion and the surface of said slider opposing to the magnetic disk is equal to or greater than 10 μm and is equal to or less than 50 μm .

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6. (Currently Amended) A magnetic head slider, as described in the claim 34, wherein said reproducing element is one, using a magneto-resistive element therein, and a distance between said heat generating portion and the surface of said slider opposing to the magnetic disk is as equal to or greater than 60 times and equal to or less than 300 times as a size of said magneto-resistive element in a normal direction of the surface of said slider opposing to the magnetic disk.

7. (Original) A magnetic head slider, as described in the claim 6, wherein the surface of said slider opposing to the magnetic disk builds up an air-bearing surface.

8. (Currently Amended) A magnetic head slider, as described in the claim 34, wherein said heat generating portion is made of a metal thin-film resistor, having a resistance value being equal to or greater than 20 Ω and equal to or less than 125 Ω .

9. (Currently Amended) A magnetic disk device, comprising:
a magnetic disk;
a recording element for recording information on a magnetic disk;
a reproducing element for reproducing information from the magnetic disk;
a slider for mounting thereon said recording element and said reproducing element, disposed opposing the magnetic disk, ~~to be used~~; and

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a heat generating portion provided on said slider, for thermally expanding
a vicinity of at least said reproducing element, wherein

said heat generating portion and said reproducing element are disposed,
so that an end portion of said slider on a surface side opposing to the magnetic
disk, in said heat generating portion, is located deeper than an end portion of
said slider on a surface side opposing to the magnetic disk, in said reproducing
element, at least and

wherein said recording element and said reproducing element are formed
through laminating thin-films on a substrate, being disposed so that said heat
generating portion is located on said substrate side with respect to said recording
element and said reproducing element, in a normal direction of the substrate, i.e.,
in a direction of laminating the thin-films, and having a metal film(s) on one side
or on both sides of said heat generating portion relating to said thin-film
laminating direction, to be thermally expanded by means of said heat generating
portion.

10. (Original) A magnetic head slider, as described in the claim 9, wherein
said recording element and said reproducing element are constructed to be a
single element.

11. (Original) A magnetic head slider, as described in the claim 9, wherein
said recording element and said reproducing element are formed through
laminating thin-films on a substrate, being disposed so that said heat generating

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portion locates on said substrate side with respect to said recording element and said reproducing element, in a normal direction of the substrate, i.e., in a direction of laminating the thin-films, and being provided with a layer made of a resin material between said heat generating portion and said substrate relating to said thin-film laminating direction.

12. (Original) A magnetic head slider, as described in the claim 9, wherein a distance between said heat generating portion and the surface of said slider opposing to the magnetic disk is equal to or greater than 10 μm and is equal to or less than 50 μm .

13. (Original) A magnetic head slider, as described in the claim 9, wherein said reproducing element is one, using a magneto-resistive element therein, and a distance between said heat generating portion and the surface of said slider opposing to the magnetic disk is as equal to or greater than 60 times and equal to or less than 300 times as a size of said magneto-resistive element in a normal direction of the surface of said slider opposing to the magnetic disk.

14. (Original) A magnetic head slider, as described in the claim 13, wherein the surface of said slider opposing to the magnetic disk builds up an air-bearing surface.

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15. (Original) A magnetic head slider, as described in the claim 9, wherein said heat generating portion is made of a metal thin-film resistor, having a resistance value being equal to or greater than 20 Ω and equal to or less than 125 Ω .